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ORGANIZATION TYPES AND ROLE STRAINS--AN EXPERIMENTAL STUDY OF COMPLEX ORGANIZATIONS.

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AN INVESTIGATION WAS MADE ON THE RELATIONSHIP BETWEEN CONTRASTING ORGANIZATIONAL TYPES CREATED IN THE LABORATORY SETTING AND THE DISTRIBUTION OF THREE TYPES OF ROLE STRAINS--ROLE UNCERTAINTY, ROLE DISPARITY, AND ROLE INCOMPATIBILITY. THE TWO ORGANIZATION TYPES STUDIED DIFFERED IN DEGREE OF SPECIALIZATION, EMPHASIS ON RULES AND REGULATIONS, AMOUNT OF WORK PRESSURE, NUMBER OF FORMAL ADMINISTRATIVE LEVELS, CLARITY OF GOALS, DIFFERENTIALS IN INFLUENCE-AUTHORITY-POWER, AND AMOUNT OF INDIVIDUAL FREEDOM. INITIALLY, THE TWO LABORATORY WORK ORGANIZATIONS HAD IDENTICAL STRUCTURES, BUT AFTER A SPECIFIED TIME, ONE OF THE STRUCTURES WAS EXPERIMENTALLY CHANGED TO A CONTRASTING TYPE. EACH LABORATORY UNIT EMPLOYED 10 PERSONS, ONE OF WHOM WAS DESIGNATED AS THE UNIT SUPERVISOR. TWO WORK TEAMS WERE DEVELOPED WITHIN EACH OF THE TWO UNITS. THE LABORATORY EXPERIMENT LASTED FOR 20 WORKING DAYS. FOUR SOURCES OF DATA WERE USED--(1) QUESTIONNAIRES, (2) RECORDINGS MADE BY "NAIVE" OBSERVERS THROUGH A ONE-WAY MIRROR, (3) DAILY INTERVIEWS WITH PARTICIPANT OBSERVERS, AND (4) THE PROJECT DIRECTOR'S DAILY LOG OF HIS OBSERVATIONS. IT WAS HYPOTHESIZED THAT ROLE UNCERTAINTY AND ROLE DISPARITY WOULD BE MORE FREQUENT IN A RELATIVELY UNSTRUCTURED ORGANIZATION, WHILE ROLE INCOMPATIBILITY WOULD BE MORE FREQUENT IN A MORE HIGHLY STRUCTURED ORGANIZATION. SOME SUPPORT WAS FOUND FOR THESE HYPOTHESES. FURTHERMORE, IT WAS OBSERVED THAT EMPHASIS ON WORK RULES WAS MORE DIRECTLY ASSOCIATED WITH THE FREQUENCY OF ROLE INCOMPATIBILITY THAN ANY OTHER ORGANIZATIONAL FEATURE, AND THAT STRATIFICATION EMPHASIS AND TYPE OF SUPERVISION WERE CLOSELY RELATED TO THE APPEARANCE OF EACH ROLE STRAIN. THIS PAPER IS A REPRINT FROM "SOCIOLOGY AND SOCIAL RESEARCH," VOLUME 51, NUMBER 2, JANUARY 1967. (JH)

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Organization Types and Role Strains; An Experimental Study of Complex Organizations

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ORGANIZATION TYPES AND ROLE STRAINS: AN EXPERIMENTAL STUDY OF COMPLEX ORGANIZATIONS*

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ABSTRACT

This study investigates the relationship between contrasting organizational types created in the laboratory setting and the distribution of three types of role strains—role uncertainty, role disparity, and role incompatibility. From a methodological perspective, this investigation contributes to the very recent emphasis in the literature on examining complex organizations via laboratory simulation. Two laboratory work organizations were created with identical structures. After a specified time, *one* of the structures was experimentally changed to a contrasting type. It is hypothesized that certain role strains will predominate within each of the contrasting organizational types. Theoretically, a tie is built between the traditional social psychological area of role behavior and the field of study called complex organizations.

I. INTRODUCTION AND RESEARCH PROBLEM

The literature of complex organizations leads to the observation that different types of strains are generated systematically within different organizations. For example, dual lines of authority exist between the medical and administrative staffs in hospitals. This arrangement generates problems of integration and coordination of activity between the respective staffs. Also it raises questions about the legitimacy of the parallel authority structures. In the prison community, role conflicts emerge in response to value conflicts between inmates, custody staff, and treatment staff.[1] State universities and colleges have struggled historically to establish and maintain organizational boundaries in their exchanges with state and federal governments.[2] Questions about organizational autonomy and control are paramount in these exchanges. In industry, the recruitment of scientists into the industrial hierarchy and the conflicts between the cultures of the industrial enterprise and the professionals has been examined.[3] Similarly, Wilensky has studied the role of experts within labor unions. From this work, he presents a typology of role orientations played by the experts and the nature of their conflicts.[4] Although

considerable research of this type exists in which strains have been related to organizational types in the natural setting, no previous work has focused on this problem by using simulation techniques in the experimental laboratory setting. One of the greatest virtues of laboratory work for the researcher is the degree of closeness or intimacy he can obtain with the intricate processes of human social behavior.

The work reported here, where three types of role strains are studied within two different organizational settings, occurred in an experimental laboratory. In this setting two structually different organizational types were created.

Role Strains. For this study, the term role strain means interference with, or disruption of adequate role performance as a member of a given organization.[5] Focus is on ego's perception of role strain. Three types of role strains are investigated.

The first strain is *role uncertainty* which refers to the inability of ego to specify the expectations held for him by others. Ego simply does not know what the system expects of him.[6]

A second type of role strain is *role disparity*. Role disparity exists when ego sees that expectations held by the occupants of salient counter positions differ from those officially specified for his behavior (e.g., job specifications and the like). When ego performs his role according to official specifications, he knows that others will judge him as not meeting their expectations. Another defining feature of role disparity is important to note. While others have their own ideas about what ego should do, they are not strongly committed or identified with their particular way of seeing ego's role. In fact, if they were made aware of ego's official role, they would likely accept that definition without much hesitancy.

Finally, *role incompatibility* refers to the situation when differing expectations are held for ego by different alters such that the fulfillment of one expectation interferes with the fulfillment of the other expectation. Here, ego is aware of competing expectations for his behavior in a given situation. Also, he knows that the different alters holding these competing expectations are highly committed to their expectations for ego. That is, they are convinced of the legitimacy of their requests for ego and will stand steadfastly to them. In contrast to role disparity where confusion about ego's expected behavior could be resolved by further information about official role specifications, the differing sets of expectations held by alters for ego could not be resolved by additional communication. In fact, added discussion of ego's role by alters would likely point

out further areas of disagreement and deepen the extent of opposing or competing views of ego's role.[7]

Interest in the distribution of these three types of role strains led to the creation of the two contrasting organizational settings described below.

Organization Types. Several different criteria have been used in the classification of complex organizations.[8] Figure I presents the organizational types created in the present study. These types involved differential emphasis on the following features: degree of specialization among the members, concern for rules and regulations, amount of work pressure, number of formal administrative levels, clarity of goals, differentials in terms of influence-authority-power, and the amount of individual freedom for the organizational members. In Figure I the labels Natural and Regulated are used as shorthand references for each of the structural types.

FIGURE I
TWO ORGANIZATION TYPES IN TERMS OF SELECTED ORGANIZATION FEATURES

	Natural	Regulated
Degree of specialization	Low	High
Emphasis on rules and regulations	Low	High
Amount of work pressure	Low	High
Number of formal administrative levels	Few	Several
Clarity of goals	Low	High
Differentials in influence-authority-power	Low	High
Amount of individual freedom	High	Low

Relationship Between Organization Types and Role Strains. Organizations vary in the amount of detail specified in behavioral directives for their members, and hence, the degree of permissiveness or flexibility available to them.[9] The structural features mentioned (cf. Figure I) characterize organization types with different degrees of flexibility of permissiveness. Depending on the organizational type, the members perceive the work climate as placing many or few constraints on their work behavior by the relative emphasis on work pace, rules and established policy, work specialization, and the like. In the natural organiza-

tion, it is expected that a higher level of permissiveness or flexibility exists than in the regulated organization. The general flexibility in the natural organization generates uncertainties in the definition of role behavior.[10]

Also, multiple role definitions are associated with indefiniteness or permissiveness in the natural organization. Alters do not agree on the role expectations they hold for egos. Particularly significant is the meaning of disagreement in the evaluation of role performance. Little agreement among alters, concerning the role expectations for egos, means that different sets of standards are used to evaluate ego's role performance. Therefore, more role disparity occurs in the natural unit.

In the regulated organization, the predominant role strain is role incompatibility. Here, the underlying mechanisms generating role disparity reach fuller expression and result in role incompatibility. Essentially, role disparity arises out of four conditions: (1) alters possessing some, but not the same information that ego has about his role; (2) alters, given the information they possess, differ in their conception of ego's role; (3) based on these different conceptions, alters evaluate ego's role performance using different standards; and finally; (4) alters are not highly committed to their own conceptions or standards because the organizational climate of the natural structure does encourage flexibility and permissiveness. How these conditions reach fuller expression, leading to role incompatibility, is discussed below.

Within the regulated organization, resembling in many ways the classic model of a bureaucracy, an aura of rigidification and closure in perspective exists. Its members are "forced" to observe established, formal, and impersonal rules and procedures. Similarly, the perspective of members is narrow due to the apparent specialization in work task, multiple hierarchical levels, differentials in influence, and minimization of individual freedom.[11] Both conditions, rigidification, and closure of perspective are major contributors to role incompatibility. Closure of perspective leads organizational members to be concerned primarily about their own work. Little effort is made to become fully informed about others and especially the roles of others as defined by policy. Compounding this is the limited and many times misleading information that circulates within the organization about its members and their responsibilities.[12] Finally, the aura of rigidity encourages individuals to take what information they have about others, and make this "official." Hence, alters have different conceptions of what they believe to be the "official" role of ego.[13] And

further, alters hold steadfastly to their definition of what they think is the "appropriate" definition.

From the above discussion the following is hypothesized: (1) within the natural organization, role uncertainty and role disparity are more frequent than role incompatibility; and (2) within the regulated organization, role incompatibility is more frequent than role uncertainty and role disparity.

II. LABORATORY PROCEDURE

Two realistic organizational units were created in the laboratory.[14] One unit worked in the morning, and the other worked in the afternoon. Twenty adults, both male and female, were employed on a salaried half-time basis for a month to develop ideas designed to promote public interest in a prominent civic event. The research project was supported by the organization responsible for the promotion of the event. At planned intervals representatives of the official organization came to the laboratory to discuss their plans relative to the event. In addition they also furnished printed materials describing their activities. At the conclusion of the study, the participants were invited to the office of the director of the civic project to receive his thanks for their work and to be awarded honorary pins for their contributions.

Each unit employed ten persons, one of whom was initially designated as the unit supervisor. This person was assigned to the supervisory position because of his past experience in a supervisory capacity. The remaining employees were randomly assigned to the two units. Two work teams were developed within each of the two units. Each work team contained one employee who acted as a participant observer. The director of the entire work organization, including the two supervisors and the four work teams, was a member of the research team.

The study was divided into two phases, phase I covering the first eight days of the one month work period. During this time the natural organizational structure was imposed. Each unit contained three formal administrative levels including a director, a unit supervisor, and the remainder of the employees were called program specialists.

Phase II involved the remaining twelve work days. At the beginning of phase II the formal structure of one of the two units was changed by promoting four individuals into new supervisory positions. With the promotions there was, of course, an increase in salary. The result was the regulated organizational structure consisting of five formal administra-

tive levels. In addition other organizational features associated with the regulated unit were developed (cf. Figure I). All of the organizational changes in the one unit were executed following a logical and rational set of reasons made known to the employees. The goal was to create a realistic work setting for the employees in terms of the task, salary paid, usefulness of their work to another organization, reasons for the organizational changes, and the nature of the overall work setting. Several types of evidence indicate that this realism was achieved.

Three supplementary types of data were collected: (1) questionnaires were administered in both units as the end of Phase I and Phase II; (2) recordings were made by "naive" observers through a one-way mirror using Modified Bales' categories; (3) daily interviews were conducted with the participant observers in each sub-unit; and, (4) the project director kept a log of his observations. The findings presented in this paper are drawn primarily from the questionnaire and participant observer data.

A set of perception scales was given to the employees in each unit after the experimental changes to measure the extent of contrast between the units. The following Guttman scales were used for this purpose: (1) *Rule Emphasis*, the degree to which rules are more or less emphasized; (2) *Stratification Emphasis*, the degree to which status differentials are more or less emphasized; (3) *Experimentation-Means*, the degree of flexibility in the determination and setting of goals; and (5) *Work Pressure*, the degree of emphasis on a high work pace.[15]

The role strains were measured by a technique using specific examples of strains known to have developed at one time or another in the work units. Prior to the second administration of the questionnaire, a member of our research team spoke individually to the supervisors of each unit to solicit information about the strains actually occurring. Six different types of situations were used to illustrate each of the three types of strains (i.e., uncertainty, disparity, and incompatibility). These situations covered different aspects of work behavior, such as procedures for typing reports, the operation of staff conferences, the development of ideas, the completion of assigned tasks, the amount of work that was expected to be accomplished, and the use of standardized outlines to work up ideas. The eighteen examples (covering three types of strain for six different aspects of work) were presented to the employees as one part of the questionnaire, and they responded by checking how frequently they faced each situation, and how much it bothered them personally. The present report does not deal with the intensity rating.

TABLE I

MEAN PERCEPTION SCALE SCORES FOR UNITS AFTER THE EXPERIMENTAL CHANGES

	Rule Emphasis	Stratification Emphasis	Experimentation Means	Experimentation Goals	Work Pressure
Natural Unit	5.3	0.9	7.1	3.0	3.0
Regulated Unit	4.8	2.0	5.8	2.5	4.0
	$p^* = .46$	.31	.29	.35	.30

* Mann-Whitney U-Test

III. RESULTS AND DISCUSSION

Perceived Structural Contrast. In Table I the average scale scores are presented for each unit after the experimental changes occurred. It can be seen that the desired contrasts between the two units did exist, except for rule emphasis. More emphasis on status differentials among employees, less individual flexibility to organize work and establish goals, and more work pressure were perceived in the regulated than in the natural unit after the experimental changes.[16]

The undesired contrast between the units on rule emphasis was understandable by examining more closely what types of changes occurred for the separate work teams within the units, and the change for individual employees. In short, the reversal was concentrated in the four-person teams in each unit, in the differential work performance levels of individual members (which because of performance was so low for two persons in the four-person work team of the natural unit that the other team members began to really "breath down the necks" of these under-producers), and in the styles of supervision employed by the team leaders in the regulated unit. The team leader of the four-person team in the regulated unit, in contrast to the desired style of supervision, worked very closely with her subordinates, was more flexible, less strict, and more friendly than the five-person team leader. And in line with this, a significant increase in rule emphasis occurred in the five-person team, but not in the four-person team.

Additional evidence supporting the overall contrasts between the units after the experimental changes was obtained from the daily reports of the participant observers. On the tenth work day, or two days after the experimental changes, the participant observer reported the comment, "Well, surely they're going to hire some more people now because you can't have all chiefs and so few Indians." And on the thirteenth work day, this same participant observer reported such comments as these: ". . . but of course this must go through channels, and Mr. X burst out laughing and said, 'Oh yes, this is the structure now . . . all these requests will have to go through channels . . . they were going to go through channels to request a change of offices to get more air' . . ." ". . . Oh, I think that they must think there is less freedom than they had before, and, of course, the forms that Mr. Y has been giving them actually, I believe, have caused them to focus on the problem . . . they think that they are too structured. Well, they are very independent people, all of

them. And they are reacting to this. Oh, making these little jokes and so forth, and that is their reason for doing so, I think." On days thirteen and fourteen, comments were made by the participant observer in the regulated unit that one of the team leaders was complaining about the amount of work, and the fact that she could keep up only working at home too.

In contrast to the above, reports from the participant observer indicated that during the second, third, and fourth weeks of work the natural unit members still felt unclear about their goals. Much time was spent trying to define the limits of their work task, and how each person could contribute most effectively. Practically no feelings of high work pressure were reported until the closing two days of work, when because of their reported disorganized approach to work, they did not know how much more they should try to accomplish, or exactly how to wrap up what they had been working on. Essentially no references were made by the participant observer about unit members' concern for lack of freedom or permissiveness to approach their work in whatever manner they saw fit.

Distribution of Role Strains. These data were collected after the experimental changes to create the regulated unit.[17] The distribution of strains within the units is shown in Table II. Hypothesis 1 stated that

TABLE II
AVERAGE NUMBER OF THREE TYPES OF ROLE STRAIN REPORTED IN THE TWO UNITS[18]

	Role Uncertainty	Role Disparity	Role Incompatibility
Natural Unit (N = 10)	1.50	1.50	1.30
Regulated Unit (N = 6)	.67	.50	1.17

more role uncertainty and role disparity than role incompatibility would occur in the Natural unit. The findings show that the average number of role uncertainties and role disparities was the same, and that both averages were higher than the average number of role incompatibilities in the natural unit.

The question arises as to why the observed differences were not greater in the frequency of uncertainty and disparity versus incompatibility. In order to answer this question, one might ask: are certain structural features more important than others in generating the different role strains? Earlier it was shown that more rule emphasis existed in the natural than

in the regulated after the experimental changes. This was in reverse of what was intended. The reason for this reversal was obtained from the Project Director's notes and from the participant observer's reports. Early in the work period, marked differences emerged in the work performance of the two males and the two females in the four-person work team of the natural unit. The males were seen as the "workers" and the females were seen as the "slackers." The males presented most of the basic ideas and the means of developing these ideas, whereas the females spent their time discussing personal matters, unrelated to the team's work.[19]

That the activity of the females was not work-oriented became very apparent to the males. On several occasions, they pressured the women to agree on standard work procedures and to work harder. This was received unfavorably by the women, and it resulted in uneasiness, frustration, and tension among the team members. Closer examination of the reported role incompatibilities in the natural unit disclosed that all of them were reported by members of the four-person team. Also, increased emphasis on rules occurred from the first to the second measurement in this team. The increased rule emphasis and high frequency of role incompatibility draws our attention back to the theoretical argument presented earlier. It was stated that rigidification and closure of perspective are major contributors to role incompatibility. With the evidence presented here, the emphasis on rules contributes to rigidification, and the focusing of concern by the males and females indicates closure of perspective. This observation suggests that rule emphasis should have a greater weight than the other structural dimensions in the generation of role incompatibility. More is said on this point as we review the findings for the second hypothesis.

Some support is seen for the second hypothesis which states that role incompatibility would be the predominant role strain in the regulated unit. This distribution of strains is shown in Table II. Although not statistically significant, the direction of the findings is encouraging, since more role incompatibility than either uncertainty or disparity is seen. Here we find that emphasis on rules is an important condition for the appearance of role incompatibility. After the experimental changes, rule emphasis increased in the five-person but decreased in the four-person team of the regulated unit. The reason for this was directly linked to differing styles of supervision for the respective teams, as mentioned above. The distribution of strains within the teams follows the predicted

pattern. That is, incompatibilities are reported primarily by members of the five-person team, and uncertainties and disparities are reported primarily by the members of the four-person team. Once again the findings point to the importance of rule emphasis as a dominant structural condition contributing to the generation of role strains.

One last interpretive comment concerns the strains reported by the supervisors in the regulated unit. One might ask: are the strains reported by the other unit members, in part, a reflection of the problems faced by their supervisors? The answer to this question is very likely, "yes." The participant observer in the regulated unit pointed out that the Project Supervisor maintained close contact with members of his unit. Furthermore, he openly shared his problems (especially his uncertainties and disparities) about his new position with others. Likewise, the Team Leader of the four-person team handled the anxieties related to her new position by encouraging close and supportive interaction with her subordinates. Given this evidence, one could hardly ignore the possibility of a "contagion effect" on the other employees by the actions of these supervisors. This interpretation suggests that strains generated at higher levels within an organization will, given close superior-subordinate interaction, generate similar strains at lower levels. In other words, to the extent that communicative and interactional processes dilute formal status differences between superior and subordinates, and thereby remove "information screens," the transmission of problems and strains at higher to lower levels within the organization is facilitated.[20]

IV. CONCLUSION

Although some support was observed for the hypotheses examined in this study, the results suggest certain modification to the underlying theoretical statement. Further consideration should be given to the differential weighing of certain structural features in the generation of role strains. The present work shows that emphasis on rules is closely linked to the appearance of role incompatibilities. The greater the emphasis on rules, the higher the frequency of role incompatibility. Differences in interpretation of work rules by organizational member can complicate the performance of work roles and create the feeling among workers that their respective roles conflict with each other.

Stratification emphasis also emerges as more important than other structural features in the generation of strains. This suggests that more weight should be given to this variable in the theoretical statement.

Important here is the significance of small status differences between administrative levels. Relatively small status differences open communication channels so that strains can be easily exchanged between levels.

One other addition to the theoretical scheme should be considered. This is the variable referred to as style of supervision, or the manner by which supervisors direct the work of their subordinates. Style of supervision sets the tone of interaction between superiors and subordinates, and may serve as an important intervening variable between organization types and their generation of role strains. Although it was found in the present research that "employee" oriented supervision covaried with uncertainties and disparities, and that "performance" oriented supervision covaried with incompatibilities, it also seems possible that different relationships could exist between the variables. For example, an "employee" oriented supervisor could emphasize work rules and procedures, and if differences emerge among workers about the interpretation of rules, the supervisor could act as the mediator. Hence, where incompatibilities would be expected, they do not appear. Other speculations are possible along this line which point to future extentions of the present line of research.

One final comment concerns the research methodology of laboratory simulation. This type of design has a marked advantage for the researcher interested in the study of complex organizations and in research problems similar to the present one. He has the opportunity for very *close observation* and *intimacy* with the laboratory conditions and with the reactions of the experimental subjects. With sufficient ingenuity, imagination, and perseverance, the researcher can capitalize on the major advantage of laboratory designs (i.e., a controlled environment) and that of natural or field studies (i.e., realism), while avoiding many of the deficiencies of both.

FOOTNOTES

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[1] Stanton Wheeler, "Role Conflict in Correctional Communities," in Donald R. Cressey, editor, *The Prison: Studies in Institutional Organization and Change* (New York: Holt, Rinehart and Winston, Inc., 1961), Chapter 6.

[2] Charles V. Kidd, *American Universities and Federal Research* (Cambridge: The Belknap Press of Harvard University Press, 1959); Malcolm Moos and Francis E. Rourke, *The Campus and the State* (Baltimore: The John Hopkins Press, 1959); and Clark Kerr, *The Uses of the University* (Cambridge: Harvard University Press, 1963).

[3] William Kornhauser, *Scientists in Industry: Conflict and Accommodation* (Berkeley and Los Angeles: University of California Press, 1963).

[4] Harold L. Wilensky, *Intellectuals in Labor Unions* (New York: The Free Press, a Division of the Macmillan Co., 1956).

[5] A similar definition in Goode's use of role strain as ". . . the felt difficulty in fulfilling role obligations." William J. Goode, "A Theory of Role Strain," *American Sociological Review*, 25:4 (August, 1960), 483.

[6] This definition differs considerably from Parsons'. For him, a person experiences uncertainty when he knows what is expected but uncertain as to the "best" of various alternative actions to take (cf., Talcott Parsons, *The Social System* (New York: The Free Press, a Division of the Macmillan Co., 1951), 449. March and Simon use uncertainty when an individual is not able to evaluate the outcomes in reacting one or another way to his role expectations (cf., James G. March and Herbert A. Simon, *Organizations* (New York: John Wiley and Sons, Inc., 1958), see especially 113-15).

[7] This is similar to Sjorberg's discussion of contradictory directives in organizations. Sjorberg discusses mutually incompatible purposes within organizations which typically evolve within and between organizational sub-units, as well as between the organization as a whole or one of its sub-units and some externally imposed source of direction (cf., Gideon Sjoberg, "Contradictory Functional Requirements and Social Systems," *Journal of Conflict Resolution*, 4 (1960), 198-208).

[8] Gouldner typed bureaucracies using organizational rules. Barnes examined "relatively open systems" versus "relatively closed systems." Clark and Wilson considered different types of organizations as to the compliance pattern between "elites" and "lower participants." Hughes and Parsons proposed other classifications. Alvin W. Gouldner, *Patterns of Industrial Bureaucracy* (New York: The Free Press, a Division of the Macmillan Co., 1955), see especially Chapter XI; Louis Barnes, *Organizational Systems and Engineering Groups: A Comparative Study of Two Technical Groups in Industry* (Massachusetts; Harvard University Press, 1960); Peter B. Clark and James Q. Wilson, "Incentive Systems: A Theory of Organizations," *Administrative Science Quarterly*, 2 (September 1961), 129-66; Peter M. Blau and W. Richard Scott, *Formal Organizations: A Comparative Approach* (San Francisco: Chandler Publishing Co., 1962), see especially 45-48; Amitai Etzioni, *A Comparative Analysis of Complex Organizations* (New York: The Free Press, a Division of the Macmillan Co., 1961), see Chapter II and III; Talcott Parsons, *Structure and Process in Modern Society* (New York: The Free Press, a Division of the Macmillan Co., 1960), 44-47; Everett C. Hughes, "Memorandum of Going Concerns" (unpublished paper read before the Society for Applied Anthropology, 1952).

[9] For example Blau and Scott stated several times in their text that the more formalized procedures are in a complex organization, the greater the degree of definiteness. Op. cit., 2-8, 27-33.

[10] Barnes, in studying "relatively open systems" versus "relatively closed systems," observed high uncertainty in the former system, especially with regard to status distinctions, op. cit., 156-59.

[11] Merton's discussion of goal displacement within bureaucracies certainly implied a narrowing of interest by employees with a loss of perspective for the total organization and its purposes. Robert K. Merton, *Social Theory and Social Structure* (New York: The Free Press, a Division of the Macmillan Co., 1957), 119.

[12] For a statement on the functions of informal communication networks and their transmission of inaccurate information, see Herbert A. Simon, *Administrative Behavior* (New York: The Macmillan Co., 1947), 160-62.

[13] Mitchell hypothesizes that the more sharply roles are defined in a system, the more intense will be the resultant strains where role conflict occurs. W. C. Mitchell, "Occupational Role Strains: The American Elective Public Official," *Administrative Science Quarterly*, 111:2 (September, 1948), 211. Getzels and Guba argue that the intensity of role conflict is a function of the rigor with which the role expectations are defined within a given situation. J. W. Getzels and E. G. Guba, "Role, Role Conflict, and Effectiveness," *American Sociological Review*, 19 (April, 1954), 164-75.

[14] The "miniature replica" simulation model outlined by Zelditch and Hopkins most closely approximates the general design of the present study. Morris Zelditch, Jr. and Terence K. Hopkins, "Laboratory Experiments with Organizations," in Amitai Etzioni, *Complex Organizations* (New York: Holt, Rinehart and Winston, Inc., 1961), 464-78. For a discussion of problems associated with the "miniature replica" model and possible extensions to it, see L. Wesley Wagner and Ernest G. Palola, "The Miniature Replica Model and Its Use in Laboratory Experiments of Complex Organizations," *Social Forces*, 42 (May, 1964), 418-29.

[15] The possible scale range, coefficient of reproducibility, minimum marginal, and per cent improvement are given below for each of the Guttman scales used:

Scale	Possible Range	C.R.	M.M.	% Improvement
Rule Emphasis	0 - 8	.90	.74	16
Stratification Emphasis	0 - 4	.90	.64	26
Experimentation-Means	0 - 8	.90	.76	14
Experimentation-Goals	0 - 6	.77	.72	5
Work Pressure	0 - 8	.88	.71	17

[16] Although the direction of the differences is as anticipated (except for rule emphasis), the probability values do not reach statistical significance. However, the probability of a Type II error is increased by the small number of cases.

[17] The Four supervisors in the Regulated Unit are excluded from this analysis. They frequently reported all three types of strain. It was apparent from the participant observers, members of the research team, and written comments on the questionnaires by the supervisors that the promotions and lack of pre-training were the major reasons for this finding.

[18] A chi-square one-sample test was applied to the following comparisons: Natural unit—role uncertainty or role disparity versus role incompatibility, $P = .70$; Regulated unit—role uncertainty versus role incompatibility, $P > .30 < .50$, role disparity versus role incompatibility, $P > .20 < .30$. These findings are in the predicted direction, but they are not statistically significant. Again, with small samples, the probability of a Type II error is heightened.

[19] This situation fits well with Strodtbeck and Mann's description of sex role differences between jurors. Using Bales' terms, he found men as proactors and women as reactors. F. L. Strodtbeck and R. D. Mann, "Sex Role Differentiation in Jury Deliberations, *Sociometry*, 19:1 (March, 1956), 3-11.

[20] Theodore Caplow, *Principles of Organization* (New York: Harcourt, Brace, and World, Inc., 1964), 252-56.